

Scientific Information Regarding the COVID-19 Vaccines

Regarding the Moderna and Pfizer vaccines:

- The Moderna and Pfizer vaccines do not contain any fetal/embryonic cells and are not produced using fetal cells.
- The Moderna and Pfizer vaccines used HEK 293 cells in testing.
- The HEK 293 cells do not come directly from a fetus/embryo.
- HEK 293 cells are descendants/clones of kidney cells procured from a legally aborted fetus in 1973.

Regarding the Johnson & Johnson vaccine:

- The Johnson & Johnson vaccine does not contain any fetal cells.
- The Johnson & Johnson vaccine used PER.C6 cells in the production process, but are subsequently removed from the vaccine during the process.
- The PER.C6 cells do not come directly from a fetus/embryo.
- PER.C6 cells are descendants/clones of retinal cells procured from a legally aborted fetus in 1985.

Analysis of SARS-CoV-2 (COVID-19) Vaccines

| Sponsor(s) ¹ | Strategy ² | Design & Development | Production | Confirmatory Lab Tests |
|---|---|-------------------------------|---|---|
| Moderna, Inc. with National Institutes of Health | <ul style="list-style-type: none"> • mRNA vaccine • non-replicating • "mRNA-1273" • T7 RNA polymerase-mediated transcription from DNA plasmid template • LNP (lipid nanoparticle) encapsulated • Given: Intramuscular 2 doses (4 weeks apart) | Sequence designed on computer | No cells used <u>Corbett et al., Nature, 5Aug2020</u> | <ul style="list-style-type: none"> • protein test & pseudovirus • HEK293 cells • Plaque reduction neutralization • Vero monkey cells • <u>Corbett et al., Nature, 5Aug2020</u> |
| Pfizer and BioNTech | <ul style="list-style-type: none"> • mRNA vaccine • non-replicating • "BNT-162a1,b1,b2,b3,c2" • nucleoside-modified mRNA <i>in vitro</i> transcribed by T7 polymerase from a plasmid DNA template • LNP (lipid nanoparticle) encapsulated • Given: Intramuscular • 2 doses (3 weeks apart) | Sequence designed on computer | No cells used <u>Vogel et al., bioRxiv 8Sept2020</u> | <ul style="list-style-type: none"> • protein test & pseudovirus • HEK293 cells • Neutralization assay • Vero monkey cells • <u>Vogel et al., bioRxiv 8Sept2020</u> |
| Janssen Research & Development, Inc. Johnson & Johnson | <ul style="list-style-type: none"> • Replication-deficient • Adenovirus vector • "Ad26.COVID-2-S" • Given: Intramuscular • 1 dose (some trials use 2 doses, 8 weeks apart) | PER.C6 cells | PER.C6 cells <u>Tostanowski et al., Nature Medicine, 3Sept2020; J&J, 30March2020;</u> <u>Janssen Vaccine Technologies</u> | No cells used. |

Source: Prentice D. (2020) Update: COVID-19 Vaccine Candidates and Abortion-Derived Cells Lines. Charlotte Lozier Institute. Accessed November 3, 2021. Modified for space considerations.

<https://lozierinstitute.org/update-covid-19-vaccine-candidates-and-abortion-derived-cell-lines/>

Other vaccines, medications, and treatments also use these cloned cells (HEK 293 and/or PER.C6) in their development, including testing and production. These include:

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|------------------------------|------------------------|---------------------|
| Tylenol/Acetaminophen | Aspirin | Albuterol |
| Azithromycin | Benadryl | Claritin |
| Enbrel | Ex-Lax/Colace | Lidocain |
| Remdesivir | Advil/Motrin/Ibuprofen | Lipitor |
| Maalox | MMR Vaccine | Aleve/Naproxen |
| Pepto Bismol | Preparation H | Prilosec OTC |
| Senokot | Simvastatin | Sudafed/Suphedrine |
| Mucinex | Tums/Calcium Carbonate | Tylenol |
| Tylenol Cold & Flu | Delsym/Robitussin | Hydroxychloroquine |
| Zocor | Metformin | Ivermectin |
| Varicella/Chickenpox Vaccine | Rubella Vaccine | Hepatitis A vaccine |

Sources:

Schneider MP. (2021) If Any Drug Tested on HEK-293 is Immoral, Goodbye Modern Medicine. Patheos. Accessed November 3, 2021
<https://www.patheos.com/blogs/throughcatholiclenses/2021/01/if-any-drug-tested-on-hek-293-is-immoral-goodbye-modern-medicine/>

The College of Physicians of Philadelphia. Human Cell Strains in Vaccine. Accessed on November 19, 2021.
<https://www.historyofvaccines.org/content/articles/human-cell-strains-vaccine-development>

A more comprehensive list can be found here: Kramer C, et al. (2008) A Composite Model for hERG Blockade. ChemMedChem. 3(2): 254-265.